

AMENDMENTS TO THE SPECIFICATION

1) Please replace paragraph [0054] as shown below.

[0054] As illustrated in FIGS. 2A, [[213,]] and 5, the novel thermal reactor or pyrolytic converter subsystem 24 of the present form of the invention is of a unique configuration that comprises a hollow housing 34 having first and second ends 34a and 34b. Disposed within housing 34 is a reaction chamber 36 that is defined by an elongated hollow structure 38 that in cross section has a novel three dome, generally triangular configuration (FIG. 5). Structure 38 is preferably constructed from a castable refractory material capable of withstanding temperatures in excess of 3200 degrees Fahrenheit. As shown in FIG. 5, chamber 36 includes first and second longitudinally extending, semicircular shaped, subchambers ~~30a-36a~~ and 36b. Extending longitudinally of chamber 36a is a first conveyor means, or conveyor mechanism 40. Extending longitudinally of chamber 36b is a similarly configured second conveyor means or conveyor mechanism 42. These conveyor mechanisms 40 and 42 are of a novel construction with each comprising a first helical screw section 43 for conveying less pyrolyzed and, therefore, more dense waste and a second paddle like section 45 for conveying the more pyrolyzed, less dense waste (see FIGS. 5 and 5A). The twin conveyor mechanisms are mounted within the reactor using conventional bearings 41 and are controllably rotated by conventional drive means 41a of the chamber shown in FIG. 6.

Following is a clean copy of amended paragraph [0054].

[0054] As illustrated in FIGS. 2A, and 5, the novel thermal reactor or pyrolytic converter subsystem 24 of the present form of the invention is of a unique configuration that comprises a hollow housing 34 having first and second ends 34a and 34b. Disposed within housing 34 is a reaction chamber 36 that is defined by an elongated hollow structure 38 that in cross section has a novel three dome, generally triangular configuration (FIG. 5). Structure 38 is preferably constructed from a castable refractory material capable of withstanding temperatures in excess of 3200 degrees Fahrenheit. As shown in FIG. 5, chamber 36 includes first and second longitudinally extending, semicircular shaped, subchambers 36a and 36b. Extending longitudinally of chamber 36a is a first conveyor means, or conveyor mechanism 40. Extending

longitudinally of chamber 36b is a similarly configured second conveyor means or conveyor mechanism 42. These conveyor mechanisms 40 and 42 are of a novel construction with each comprising a first helical screw section 43 for conveying less pyrolyzed and, therefore, more dense waste and a second paddle like section 45 for conveying the more pyrolyzed, less dense waste (see FIGS. 5 and 5A). The twin conveyor mechanisms are mounted within the reactor using conventional bearings 41 and are controllably rotated by conventional drive means 41a of the chamber shown in FIG. 6.

2) Please replace paragraph [0056] as shown below.

[0056] Turning particularly to FIGS. 2B, ~~6, and 7,~~ and 13B, the thermal oxidizer 26, of the present form of the invention, includes a hollow housing 47 having an inner wall 47a. Disposed between the inner and outer wall is a ceramic fiber insulation 49. Within housing 47 is a first stage defined by a first subchamber 50 and a second stage defined by a second subchamber 52. Dividing subchambers 50 and 52 is a novel baffle means for controlling the flow of gases between the chambers. This baffle means here comprises a novel barrier ring assembly 56 that comprises a pair of fixedly mounted semicircular segments 57 (FIGS. 10, 12, 13B, and 15) and a pivotally mounted assembly 58. Assembly 58 is made up of a pair of semicircular segments 59 that are affixed to a ceramic baffle plate 60 (see FIGS. 10, 12, 13B, and 15). As illustrated in FIGS. 12, 13B and 15, the baffle ring assembly 56 is movable between the first and second positions illustrated by the solid and phantom lines in FIG. 13B. Thermal oxidizer 26 is also is also capable of withstanding temperatures in excess of 3000 degrees Fahrenheit.

Following is clean copy of amended paragraph [0056].

[0056] Turning particularly to FIG. 2B, and 13B, the thermal oxidizer 26, of the present form of the invention, includes a hollow housing 47 having an inner wall 47a. Disposed between the inner and outer wall is a ceramic fiber insulation 49. Within housing 47 is a first stage defined by a first subchamber 50 and a second stage defined by a second subchamber 52. Dividing subchambers 50 and 52 is a novel baffle means for controlling the flow of gases between the chambers. This baffle means here comprises a novel barrier ring assembly 56 that comprises a pair of fixedly mounted semicircular segments 57 (FIGS. 10, 12, 13B, and 15) and a pivotally mounted assembly 58. Assembly 58 is made up of a pair of semicircular segments 59 that are

affixed to a ceramic baffle plate 60 (see FIGS. 10, 12, 13B, and 15). As illustrated in FIGS. 12, 13B and 15, the baffle ring assembly 56 is movable between the first and second positions illustrated by the solid and phantom lines in FIG. 13B. Thermal oxidizer 26 is also is also capable of withstanding temperatures in excess of 3000 degrees Fahrenheit.

3) Please replace paragraph [0058] as shown below.

[0058] First subchamber 50 has an outlet port 74 that is in communication with a port 76 formed in reactor 24 via a conduit 78 (FIGS. 1A and 1B). In a manner presently to be described, reaction chamber 36, which preferably operates at less than five percent (5%) oxygen is initially heated in a flame-free manner by heated gases transferred from subchambers 50 and 52 of the thermal oxidizer to ~~upper chamber 36c of reaction chamber 36~~ the area between the inner surfaces 34c of the housing 34 and the ceramic reaction chamber 38.

Following is a clean copy of amended paragraph [0058].

[0058] First subchamber 50 has an outlet port 74 that is in communication with a port 76 formed in reactor 24 via a conduit 78 (FIGS. 1A and 1B). In a manner presently to be described, reaction chamber 36, which preferably operates at less than five percent (5%) oxygen is initially heated in a flame-free manner by heated gases transferred from subchambers 50 and 52 of the thermal oxidizer to the area between the inner surfaces 34c of the housing 34 and the ceramic reaction chamber 38.

4) Please replace paragraph [0061] as shown below.

[0061] As shown in FIGS. 1A and 1B, a portion of the waste gases flowing through steam generator 28 is first cooled with dilution air and is then transferred to the dryer subsystem 20 via a diverter valve 110 and a conduit 112. These hot waste gases at a temperature of about 550 degrees Fahrenheit are used to efficiently dry the waste contained within the dryer 20. From dryer 20 the gases are returned to the thermal oxidizer via an overhead conduit 114 (FIG. 1B). The portion of the gases from the steam generator that are not diverted to the dryer are transferred to a condensed scrubber apparatus 118 which effectively removes harmful contaminants from the exhaust gases so that the gases can be safely discharged to atmosphere via ~~a conventional blower unit~~ [[120]]119. Scrubber apparatus 118 is commercially available

from various sources such as C. W. Cole Fabricators, Inc. of Long Beach, Calif. Similarly, blower unit ~~[[120]]~~119 is readily available from sources such as New York Blowers Co. of Willow Brook, Ill.

Following is a clean copy of amended paragraph [0064].

[0061] As shown in FIGS. 1A and 1B, a portion of the waste gases flowing through steam generator 28 is first cooled with dilution air and is then transferred to the dryer subsystem 20 via a diverter valve 110 and a conduit 112. These hot waste gases at a temperature of about 550 degrees Fahrenheit are used to efficiently dry the waste contained within the dryer 20. From dryer 20 the gases are returned to the thermal oxidizer via an overhead conduit 114 (FIG. 1B). The portion of the gases from the steam generator that are not diverted to the dryer are transferred to a condensed scrubber apparatus 118 which effectively removes harmful contaminants from the exhaust gases so that the gases can be safely discharged to atmosphere via a conventional blower unit 119. Scrubber apparatus 118 is commercially available from various sources such as C. W. Cole Fabricators, Inc. of Long Beach, Calif. Similarly, blower unit 119 is readily available from sources such as New York Blowers Co. of Willow Brook, Ill.

5) Please replace paragraph [0064] with the following amended paragraph.

[0064] As the waste material, being transferred to the hopper by waste conveyor 120, starts to flow into the hopper 33, the upper butterfly valve 122 of the hopper system is moved into the open position shown in FIG. 1C of the drawings and the lower butterfly valve 124 is moved into a closed position blocking any transfer of waste material from the hopper into the auger portion 126 of the feed assembly. Once intermediate chamber 128 of the feed assembly is filled with the waste to be pyrolyzed, a vacuum is drawn within chamber 128 by a vacuum pump "V" that is interconnected with chamber 128 by a conduit ~~130-123~~ (FIG. 1C). After chamber 128 has been suitably evacuated, butterfly 124 is moved into an open position permitting the waste contained within chamber 128 to flow into the auger conveyor means of the feed assembly without jeopardizing the integrity of the vacuum within the reactor chamber. As is indicated by the arrow 129 in FIG. 1C, the dried waste material entering the chamber 130 that contains the conveyor screw 133 is controllably fed into the reactor chamber via hollow shaft 132 and inlet 134 of the reactor chamber (FIG. 2A).

Following is a clean copy of amended paragraph [0064].

[0064] As the waste material, being transferred to the hopper by waste conveyor 120, starts to flow into the hopper 33, the upper butterfly valve 122 of the hopper system is moved into the open position shown in FIG. 1C of the drawings and the lower butterfly valve 124 is moved into a closed position blocking any transfer of waste material from the hopper into the auger portion 126 of the feed assembly. Once intermediate chamber 128 of the feed assembly is filled with the waste to be pyrolyzed, a vacuum is drawn within chamber 128 by a vacuum pump "V" that is interconnected with chamber 128 by a conduit 123 (FIG. 1C). After chamber 128 has been suitably evacuated, butterfly 124 is moved into an open position permitting the waste contained within chamber 128 to flow into the auger conveyor means of the feed assembly without jeopardizing the integrity of the vacuum within the reactor chamber. As is indicated by the arrow 129 in FIG. 1C, the dried waste material entering the chamber 130 that contains the conveyor screw 133 is controllably fed into the reactor chamber via hollow shaft 132 and inlet 134 of the reactor chamber (FIG. 2A).

6) Please replace paragraph [0066] with the following amended paragraph.

[0066] The waste material introduced into chamber 36 in the manner just described will be carried forwardly of the reactor by the ~~helical screws conveyor mechanisms~~ 40 and 42 and, as it travels forwardly of the reactor will be undergo pyrolyziation due to the elevated temperature of the reactor chamber. By the time the waste material reaches the end of the screw conveyor, sections 43, it will have been substantially reduced to carbon form which is of a lesser density that will permit it to be transferred through the remaining length of the reactor chamber by the novel paddle conveyors 45 that are of a construction best seen in FIG. 5A.

Following is a clean copy of amended paragraph [0066].

[0066] The waste material introduced into chamber 36 in the manner just described will be carried forwardly of the reactor by the conveyor mechanisms 40 and 42 and, as it travels forwardly of the reactor will be undergo pyrolyziation due to the elevated temperature of the reactor chamber. By the time the waste material reaches the end of the screw conveyor, sections 43, it will have been substantially reduced to carbon form which is of a lesser density that will

permit it to be transferred through the remaining length of the reactor chamber by the novel paddle conveyors 45 that are of a construction best seen in FIG. 5A.